

MULTICHANNEL FILTER FOR OUTDOOR HANDHELD  
ULTRA WIDEBAND COMMUNICATIONS

Abstract of the Disclosure

A multichannel filter-based outdoor handheld UWB communication transceiver is provided according to some  
5   embodiments. The multichannel filter may be reused to  
produce the 11-multichannel UWB signal with multi-carrier  
frequencies by using either one single digital FIR lowpass-  
shaping filter or one digital cascaded FIR filter including  
the digital multiband FIR lowpass-shaping filter and the  
10   digital FIR rejected lowpass filter. The handheld UWB  
communication transceiver may transfer the UWB signal with  
scalability data rates up to 7.15 Gcps for the outdoor  
operations.